

REMARKS/ARGUMENTS

Responsive to the non-final office action mailed September 18, 2006, Applicants provide the following remarks. Reconsideration and allowance of the present application in view of the amendments and remarks herein are respectfully requested.

Amendments to the Claims

Applicants have amended independent claims 1 and 26 to more particularly point out the invention. Subject matter of claim 6 has been incorporated into independent claims 1 and 26, and claim 6 has been cancelled without prejudice. Claims 1 and 26, as amended, clearly point out that the Raman gain portions of the Raman-assisted EDFA hybrid amplifiers act as pre-amplifiers to the EDFA portions by each providing “a different associated” gain so that each EDFA has substantially the same total input power regardless of the span loss and length associated with the amplifier. Support for these amendments may be found throughout the specification, e.g. at paragraphs [00032], [00035], [00036] and [00039]. No new matter has been added.

35 USC §103

Claims 1-6, 9, 10, 12, 15 and 26-27 have been rejected under 35 USC §103(a) as being unpatentable over Onaka et al. (U.S. Patent No. 6,785,042) in view of Kinoshita (U.S. Patent No. 6,108,123). Applicants respectfully traverse this rejection.

The Examiner has correctly acknowledged that “Onaka differs from the claimed invention in that Onaka does not specifically disclose that the EDFA gain portion of the plurality (sic) hybrid amplifier has substantially the same total input power as each of the other EDFA throughout the optical communications link.” Official Action dated June 18, 2006, page 3, penultimate line to page 4, line 2. Independent claims 1 and 26, as amended, also require that the claimed communication link include “a plurality of optical fiber spans of varying span lengths and span loss” with each of the Raman assisted EDFA hybrid amplifiers “being associated with a different one of said spans” and each Raman amplifier gain portion configured to impart a

“different” associated gain so that each of the each of said EDFA gain portions has substantially the same total input power “regardless of said varying span lengths and span loss.” Onaka is also devoid of any teaching or disclosure of these limitations.

Kinoshita does not provide the missing teachings. Kinoshita teaches a system wherein amplifiers operate with a constant output power regardless of a variation in the number of WDM channels in the system. See e.g. Abstract. In particular, and with reference to FIG. 7 of Kinoshita,

[e]ach optical repeater 94 has an optical amplifier 96 for amplifying the WDM signal light and an ALC circuit 100 for controlling the optical amplifier 96 so that the output level of the optical amplifier 96 becomes a target level. Column 9, lines 3-7. (emphasis added).

The constant output power in Kinoshita is achieved using dummy channels in place of the signal channels not in use. See e.g. column 9, lines 19-27. The dummy signals “make constant the total power of the WDM signal light to be supplied to each optical repeater 94.” Column 9, lines 28-33. (emphasis added). This makes it “unnecessary to change the target level for the ALC in each optical repeater, thereby allowing the ALC circuit to be simplified.” Column 9, lines 35-38.

Kinoshita describes a system where the output and input powers of the amplifiers are constant. Of course, two amplifiers can have constant output without their outputs being the same. Applicants find nothing in Kinoshita that indicates the input powers to EDFA portions of a different Raman assisted EDFA hybrid amplifiers should be made the same regardless of span length or loss by imparting a different gain in associated Raman variable gain portion amplifiers, as claimed.

Moreover, even if it were possible to interpret the term “constant” in Kinoshita to mean the “same”, maintaining the same output level and the same input to the amplifiers in Kinoshita could not be achieved unless the amplifier spans had identical loss. Independent claims 1 and 26, however, clearly require that “a plurality of optical fiber spans of varying span lengths and span loss” and that each of the plurality of Raman assisted EDFA hybrid amplifiers be “associated with a different one of said spans.”

Neither Kinoshita nor Onaka, nor their combination, teaches or suggests a system or method including “a plurality of optical fiber spans of varying span lengths and span loss” with each of a plurality of Raman assisted EDFA hybrid amplifiers “being associated with a different

one of said spans” and each Raman amplifier gain portion being configured to impart a “different” associated gain so that each of said EDFA gain portions has substantially the same total input power “regardless of said varying span lengths and span loss”, as required by independent claims 1 and 26.

There is therefore no combination of Kinoshita or Onaka that one could make to achieve the claimed invention at the time the invention was made. As such, Applicants respectfully submit that the Examiner has not established a *prima facie* case of obviousness and that claims 1 and 26 could not have been obvious in view of Onaka and Kinoshita at the time the invention was made. Claims 2– 6, 9-10, 12, 15 and 27 depend directly or indirectly from claim 1 or 26 and are allowable by virtue of their dependency as well as for their own limitations. Applicants respectfully request, therefore, that the rejection of claims 1-5, 9, 10, 12, 15 and 26-27 under 35 USC §103(a) as being unpatentable over Onaka et al. in view of Kinoshita be withdrawn upon reconsideration.

In light of the foregoing remarks, it is believed that all of the presently pending claims are in a condition for allowance. Entry of the present amendment and allowance of the application is respectfully requested. In the event the Examiner deems personal contact desirable in disposition of this application, the Examiner is respectfully requested to call the undersigned attorney at (603) 668-6560.

No additional fees are believed to be due. In the event there are any fee deficiencies, please charge them (or credit any overpayment) to our Deposit Account No. 50-2121.

Respectfully submitted,

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